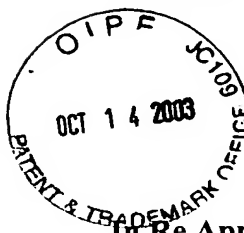


DT04 Rec'd PCT/PTO

PATENT

DOCKET NO.: THOM-0020



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Martin John Charles Offa-Jones

Application No.: 10/070,467

Filed: July 11, 2002

For: Reclosable Fasteners For Plastic Bags And Other Containers

Confirmation No.: 4678

Group Art Unit: 3677

Examiner: James R. Brittain

DATE OF DEPOSIT: October 10, 2003

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Attached please find the certified copy/copies of the foreign application from which priority is claimed for this case:

Country:	Application No.:	Filing Date:
United Kingdom	0016894.8	07/11/2002

☒ The fee of \$130.00 for entry of late priority documents is enclosed herewith. Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.

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Date: *October 10, 2003*

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Description 4

Claims

Abstract

Drawing(s) 1 + 1 1/4

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Priority documents

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Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*)

Request for substantive examination (*Patents Form 10/77*)

Any other documents  
(Please specify)

11. We request the grant of a patent on the basis of this application

Signature W. P. Thompson & Co. Date July 10, 2000

W. P. Thompson & Co.

12. Name and daytime telephone number of person to contact in the United Kingdom Roger B Thomson  
01462 682139

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1.	Your reference	RBT/P300575GB		
2.	Patent application number (The Patent Office will fill in this part)	0016894.8		11 JUL 2000
3.	Full name, address and postcode of the or of each applicant ( <i>underline all surnames</i> )	Supreme Plastics Group Limited Supreme House 300 Regents Park Road Finchley London N3 2TL		
	Patents ADP number ( <i>if you know it</i> )	7283518001		
	If the applicant is a corporate body, give the country/state of its incorporation	United Kingdom		
4.	Title of the invention	RECLOSABLE FASTENERS FOR PLASTICS BAGS AND OTHER CONTAINERS		
5.	Name of your agent ( <i>if you have one</i> )	W. P. Thompson & Co.		
	"Address for service" in the United Kingdom to which all correspondence should be sent ( <i>including the postcode</i> )	Eastcheap House, Central Approach Letchworth Herts SG6 3DS		
	Patents ADP number ( <i>if you know it</i> )	158003		
6.	If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and ( <i>if you know it</i> ) the or each application number	Country	Priority application number ( <i>if you know it</i> )	Date of filing ( <i>Day/month/year</i> )
7.	If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application		Date of filing ( <i>Day/month/year</i> )
8.	Is a statement of inventorship and of right to grant of a patent required in support of this request? ( <i>Answer 'yes' if:</i> a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body. See note (d))	Yes		

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RECLOSABLE FASTENERS FOR PLASTICS BAGS AND OTHER CONTAINERS

This invention relates to reclosable fasteners, otherwise known as zippers, for plastics bags and other containers, and 5 is particularly concerned with zippers intended to be applied to a film or web using cross-web techniques.

When a zipper strip is applied to a film or web, heat and pressure are applied to effect the welding of the zipper to the film or web. The heat and/or the pressure can result in 10 damage to the closure. Various measures have been adopted to try to minimise the effects of the heat and pressure. However, it can still happen that the zipper is damaged or distorted as a result of these external influences.

It is an object of the present invention to provide an 15 improved design of zipper which is resistant to distortion or damage due to the welding heat and/or pressure.

Broadly in accordance with the present invention there is provided a reclosable fastener for plastics bags and other containers, comprising two elements, each element comprising 20 at least one hook engageable with a hook of the other element, and each element comprising an upstanding post at the margin of the fastener which is engageable with a of the other element at the opposing margin of said other element, wherein the respective posts and heels of the two elements are angled 25 at their respective contact surfaces.

The fact that the respective contact surfaces of the posts and heels are angled or mitred enables the closure more easily to resist pressure without distortion and without the hooks being squashed. The margins of the closure are more 30 easily able to resist bending and to maintain their desired supporting function.

Preferably, each of the elements of the closure is provided with two hooks, engageable with the hooks of the other element. . .

In a preferred embodiment of the invention, and with a  
5 view particularly to resisting distortion or damage due to heat, each of the elements is provided at or adjacent to its margins, on the face remote from the hook or hooks, with a pair of protruding ribs which provide additional bulk at these marginal zones. The ribs are preferably overlaid each with  
10 a layer of high performance sealing/welding material, such as EVA for example.

In a preferred embodiment of the invention, a single long flange is provided on one only of the two interengageable elements of the closure, this flange being arranged to face  
15 the inside of the bag and being used for initial attachment to the film or web.

In order that the invention may be more fully understood, one presently preferred embodiment of zipper in accordance with the invention will now be described by way of example and  
20 with reference to the accompanying drawing which is a schematic cross-sectional view through the zipper.

Referring to the drawing, there is shown a zipper, indicated generally at 10, comprising a first element 12 and a second element 14. The two elements 12 and 14 are generally  
25 the same as each other, apart from the fact that element 12 is provided with a single elongate flange 16. Each element 12, 14 comprises a body portion 18 with two upstanding legs  
20 which terminate in hooks 22. The respective hooks 22 of the two elements 12 and 14 are interengageable to make the  
30 reclosable fastener.

Each element 12, 14 also comprises an upstanding support

post 24 at one margin. The support post 24 is slightly longer than the hooked legs 20, 22 so that it extends slightly beyond the tops of the legs. The upper end surface 26 of each post 24 is tapered to provide an angled contact surface. Facing 5 each support post 24, on the opposing element, there is provided a heel portion 28, again at the margin. The surface of each heel portion 28 facing the respective post 24 is shaped to be complementary to the angled contact surface 26. As can be seen from the drawing, with this arrangement, the 10 respective posts and heels nest with one another to provide a shape-locking configuration which tends to resist squashing or outward bending under vertical loads. The angled contact surfaces are able to absorb the welding pressure and maintain their linear integrity, thus preventing the hooked legs 20, 15 22 from being squashed or distorted.

In order to reduce the effects of the welding heat, each of the closure elements 12 and 14 is provided with a pair of ribs 30 on the outside face remote from the legs 20. The respective ribs 30 are provided again at the margins of the 20 closure, in alignment with the posts 24 and heel portions 28. The ribs 30 are provided by a thickening of the material of which each of the two elements is composed. Because of the additional bulk provided by the ribs 30, they also contribute to the resistance of the closure to deformation due to 25 pressure. On each rib 30 there is provided a layer 32 of a material which is a high-performance sealing/welding material or blend of materials, such as EVA for example. This facilitates the welding of the zipper to the encompassing web or film (not shown). The layers 32 are co-extruded with the 30 closure elements 12 and 14.

The single long flange 16 which is part of element 12 is



arranged to face the inside of the bag or container. This flange is used for initial attachment to the film or web as the zipper is applied to the web by a cross-web technique. The provision of a single long flange provides increased internal strength to the bag by altering the angle at which the load in the bag acts against the zipper closure.

